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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,758	01/22/2004	Ik-Soo Lee	21C-0018-P	7540
23413	7590	12/12/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			DUONG, THOI V	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,758

Applicant(s)

LEE ET AL.

Examiner

Thoi V. Duong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) 16-20 ~~is~~ are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11 and 13-15 ~~is~~ are rejected.
- 7) ☒ Claim(s) 3,4 and 12 ~~is~~ are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/244,492.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-15 in the reply filed on September 26, 2005 is acknowledged.

Currently, claims 1-20 are pending in this application; of these claims, claims 16-20 are withdrawn from consideration and claims 1-15 are considered in this office action.

Specification

2. The disclosure is objected to under 37 CFR 1.71, as being so incomprehensible as to preclude a reasonable search of the prior art by the examiner. For example, the following items are not understood: in page 19 line 11 through page 20 line 7, Applicant specifies that the areal size of the first inclined plane 272 has a larger areal size by having the angles (beta1-betan) of the second inclined plane 274 being gradually increased, the angle "alpha" has a substantially identical value, and the light reflection sections 276 have a substantially identical height as the light reflection section is position remoter from the lamp 320. However, geometrically, the areal size of the first inclined plane 272 will not be varied (or will be the same) if the angle "alpha" has a substantially identical value, and the light reflection sections 276 also have a substantially identical height.

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

A shortened statutory period for reply to this action is set to expire ONE MONTH or THIRTY DAYS, whichever is longer, from the mailing date of this letter.

Drawings

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Fig. 8 shows that the first inclined plane 272 has a larger areal size, while the angle "alpha" has a substantially identical value and the light reflection sections 276 have a substantially identical height "H" as the light reflection section is positioned remoter from the lamp. Fig. 8 should show that the first inclined planes are parallel and have a larger aerial size while the light reflection sections 276 have a height "H" gradually increased as the light reflection section is positioned remoter from the lamp. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 6 is dependent on claims 2 and claim 5, whereas claim 2 recites the areal sizes of the second reflecting planes being larger as the second light reflecting plane is remoter from the light incident portion and claim 5 recites the second angles having a substantially identical value and the first angles being gradually increased when the first reflecting plane is remoter from the light incident portion. However, these configurations result in the different height of the light reflecting sections or the height of the light reflecting sections is higher when it is remoter from the light incident portion. Therefore, claim 6 fails to comply with the enablement requirement.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 8-11, 14 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (USPN 6,168,281 B1).

Re claims 1 and 10, as shown in Figs. 3-5, Suzuki discloses a liquid crystal display device comprising:

a lamp assembly 4, 5 to generate light in a linear direction',

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a display panel assembly 51 to display images using image data externally provided and light provided in a planar direction (see also Fig. 10 and col. 1, lines 64-67), and

a light guiding plate comprising:

a light incident portion 3 into which the light is incident from the lamp assembly 4, 5,

a light reflecting pattern 10 to reflect the light provided from the light incident portion (Fig. 3); and

a light transmitting surface 8 to transmit the light reflected by the light reflecting pattern to the display panel assembly 51,

wherein the light reflecting pattern 10 includes a plurality of light reflecting sections 11 (grooves) each of which has:

a first light reflecting plane 14 that is inclined with respect to the light transmitting surface to face toward the light source 4, and

a second light reflecting plane 13 that is inclined with respect to the light transmitting surface 8 and connected with an edge of the first light reflecting plane 14 so that the light reflection sections 11 each form a prism shape, the light reflecting sections respectively having the second light reflecting planes 13 that are configured to have different areal sizes to control reflectivity of the respective light reflecting sections (Fig. 5; col. 7, lines 24-34 and col. 9, line 62 through col. 10, line 4).

Re claims 2 and 11, the areal sizes of the second light reflecting planes 13 are gradually increased by a selected amount such that the areal size of a second light

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reflecting plane is larger as the second light reflecting plane is remoter from the light incident portion (col. 7, lines 30-34).

Re claims 8 and 14, as shown in Figs. 3 and 5, the areal sizes of the light reflecting sections are gradually increased by a selected amount such that the areal sizes of first and second light reflecting planes of a light reflecting section are larger as the light reflecting section is remoter from the light incident portion,

wherein, re claims 9 and 15, the first light reflecting planes 13 of the light reflecting sections respectively have first angles "alpha" with respect to the light transmitting surface 8, the second light reflecting planes 14 of the light reflecting sections respectively have second angles "beta" with respect to the light transmitting surface 8, and the light reflecting sections each have different heights, wherein the first angles have a substantially identical value, the second angles have a substantially identical value, and the heights are gradually increased by a selected amount such that the height of a light reflecting section is larger as the light reflecting section is remoter from the light incident portion (col. 7, lines 30-34).

8. Claims 1, 2, 8, 10, 11 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al. (Yang, USPN 6,323,919 B1).

Re claims 1 and 10, as shown in Figs. 1 and 2, Ishihara discloses a liquid crystal display device comprising:

a lamp assembly 32, 34 to generate light in a linear direction,

a display panel assembly 10 to display images using image data externally provided (inherently) and light provided in a planar direction (Fig. 1B), and

a light guiding plate 20 comprising:

a light incident portion (left surface of the light guiding plate 20 in Fig. 1A) into which the light is incident from the lamp assembly 32, 34;

a light reflecting pattern 12 to reflect the light provided from the light incident portion; and

a light transmitting surface (rear surface of the light guiding plate 20 in Fig. 1A) to transmit the light reflected by the light reflecting pattern to the display panel assembly 10,

wherein the light reflecting pattern 12 includes a plurality of light reflecting sections each of which has:

a first light reflecting plane 15 that is inclined with respect to the light transmitting surface to face toward the light source 32; and

a second light reflecting plane 14 that is inclined with respect to the light transmitting surface and connected with an edge of the first light reflecting plane 15 so that the light reflection sections each form a prism shape, the light reflecting sections respectively having the second light reflecting planes 14 that are configured to have different areal sizes to control reflectivity of the respective light reflecting sections (col. 4, line 64 through col. 5, line 15).

Re claims 2 and 11, the areal sizes of the second light reflecting planes 14 are gradually increased by a selected amount such that the areal size of a second light reflecting plane is larger as the second light reflecting plane is remoter from the light incident portion (col. 4, line 64 through col. 5, line 15).

Re claims 8 and 14, the areal sizes of the light reflecting sections are gradually increased by a selected amount such that the areal sizes of first and second light reflecting planes of a light reflecting section are larger as the light reflecting section is remoter from the light incident portion (col. 4, line 64 through col. 5, line 15).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 5, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (Yang, USPN 6,323,919 B1) in view of Ishihara et al. (Ishihara, US 2001/0019379 A1).

Re claim 7, as shown in Fig. 2, Yang discloses a first angle "gamma" of the first reflecting plane 15 may be varied from 40.5 to 44.5 degrees and the second angle "alpha of the second reflecting plane has a substantially identical value of 1.5 degrees (col. 4, line 64 through col. 5, line 29).

However, Yang does not disclose the first angles being gradually increased by a selected amount such that the first angle of a first reflecting plane is larger as the first light reflecting plane is remoter from the incident portion as recited in claims 5 and 13.

As shown in Fig. 16, Ishihara discloses a light guiding plate comprising a plurality of light reflecting sections 25 (projections) each of which defined by a first light reflecting plane 25b and a second light reflecting plane 25a, wherein the first angles "theta" of the

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first light reflecting planes 25b are gradually increased by a selected amount such that the first angle of a first reflecting plane is larger as the first light reflecting plane is remoter from the incident portion (paragraph 66).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the light guiding plate of Yang with the teaching of Ishihara by forming the first angles being gradually increased by a selected amount such that the first angle of a first reflecting plane is larger as the first light reflecting plane is remoter from the incident portion so as to obtain a uniform illumination for the display from the light source (paragraph 10).

Allowable Subject Matter

11. Claims 3, 4 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claims 3 and 12, the following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically, none of the prior art of record discloses, in combination with other limitations as claimed, a light guide plate comprising the first light reflecting planes of the light reflecting sections respectively having first angles with respect to the light transmitting surface, and the second light reflecting planes of the light reflecting sections respectively having second angles with respect to the light transmitting surface, the first angles having a substantially identical value and the second angles being gradually decreased by a selected amount such that the second angle of a

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second light reflecting plane is smaller as the second light reflecting plane is remoter from the light incident portion.

The most relevant reference, US 2001/0019379 A1 to Ishihara et al. (Ishihara), fails to disclose or suggest the first angles having a substantially identical value. As shown in Fig. 16, Ishihara discloses a light guide plate 2 comprising the first light reflecting planes 25b of the light reflecting sections 25 respectively having first angles "theta" with respect to the light transmitting surface (rear surface), and the second light reflecting planes 25a of the light reflecting sections 25 respectively having second angles with respect to the light transmitting surface, the first angles being determined such that $\theta_1 < \theta_2 < \dots < \theta_n$ and the second angles being gradually decreased by a selected amount such that the second angle of a second light reflecting plane is smaller as the second light reflecting plane is remoter from the light incident portion due to a constant pitch between the retreated points 19 in the front surface of the light guide plate 2 (paragraphs 65 and 66).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-

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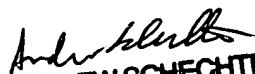
2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



12/08/2005



ANDREW SCHECHTER
PRIMARY EXAMINER